



INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

We make Indiana a cleaner, healthier place to live

Frank O'Bannon
Governor

Lori F. Kaplan
Commissioner

100 North Senate Avenue
P.O. Box 6015
Indianapolis, Indiana 46206-6015
(317) 232-8603
(800) 451-6027
www.state.in.us/idem

PART 70 SIGNIFICANT SOURCE MODIFICATION OFFICE OF AIR MANAGEMENT

Naval Surface Warfare Center, Crane Division
300 Highway 361
Crane, Indiana 47522-5001

(herein known as the Permittee) is hereby authorized to construct and operate subject to the conditions contained herein, the emission units described in Section A (Source Summary) of this approval.

This approval is issued in accordance with 326 IAC 2 and 40 CFR Part 70 Appendix A and contains the conditions and provisions specified in 326 IAC 2-7 as required by 42 U.S.C. 7401, et. seq. (Clean Air Act as amended by the 1990 Clean Air Act Amendments), 40 CFR Part 70.6, IC 13-15 and IC 13-17.

Source Modification No.: 101-11153-00005

Issued by: 
Paul Dubenetzky, Branch Chief
Office of Air Management

Issuance Date:
October 12, 1999

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SECTION A

SOURCE SUMMARY

This approval is based on information requested by the Indiana Department of Environmental Management (IDEM), Office of Air Management (OAM). The information describing the emission units contained in conditions A.1 through A.2 is descriptive information and does not constitute enforceable conditions. However, the Permittee should be aware that a physical change or a change in the method of operation that may render this descriptive information obsolete or inaccurate may trigger requirements for the Permittee to obtain additional permits or seek modification of this approval pursuant to 326 IAC 2, or change other applicable requirements presented in the permit application.

A.1 General Information [326 IAC 2-7-4(c)] [326 IAC 2-7-5(15)]

The Permittee owns and operates a military base where ammunition, rockets and other military ordnance are manufactured, stored and disposed.

Responsible Official: Captain T. Scott Wetter
Source Address: 300 Highway 361, Crane, Indiana 47522-5009
Mailing Address: Code 095 Building 3260, NASURFWARCENDIV, 300 Highway 361,
Crane, IN 47522-5009
SIC Code: 97
County Location: Martin
County Status: Attainment for all criteria pollutants
Source Status: Part 70 Permit Program
Major Source, under PSD Rules;
Major Source, Section 112 of the Clean Air Act

A.2 Emission Units and Pollution Control Equipment Summary [326 IAC 2-7-4(c)(3)] [326 IAC 2-7-5(15)]

This stationary source is approved to construct and operate the following emission units and pollution control devices:

- (1) Bomb Finishing Line with a maximum capacity of thirteen (13) units per hour and Projectile Renovation Operations with a maximum capacity of 120 units per hour, consisting of the following units:

Three (3) paint booths, identified as:

- (a) CRN-2728-01-12-N42, using a dry filter to control particulate matter emissions.
- (b) CRN-2728-02-12-N42, using a dry filter to control particulate matter emissions.
- (c) CRN-2728-03-12-N42, using a dry filter to control particulate matter emissions.

A.3 Part 70 Permit Applicability [326 IAC 2-7-2]

This stationary source is required to have a Part 70 permit by 326 IAC 2-7-2 (Applicability) because:

- (a) It is a major source, as defined in 326 IAC 2-7-1(22);
- (b) It is a source in a source category designated by the United States Environmental Protection Agency (U.S. EPA) under 40 CFR 70.3 (Part 70 - Applicability).

SECTION B GENERAL CONSTRUCTION CONDITIONS

B.1 Permit No Defense [IC 13]

This approval to construct does not relieve the Permittee of the responsibility to comply with the provisions of the Indiana Environmental Management Law (IC 13-11 through 13-20; 13-22 through 13-25; and 13-30), the Air Pollution Control Law (IC 13-17) and the rules promulgated thereunder, as well as other applicable local, state, and federal requirements.

B.2 Definitions [326 IAC 2-7-1]

Terms in this approval shall have the definition assigned to such terms in the referenced regulation. In the absence of definitions in the referenced regulation, any applicable definitions found in IC 13-11, 326 IAC 1-2 and 326 IAC 2-7 shall prevail.

B.3 Effective Date of the Permit [40CFR 124]

Pursuant to 40 CFR 124.15, 40 CFR 124.19, and 40 CFR 124.20, the effective date of this permit will be thirty-three (33) days after issuance.

B.4 Revocation of Permits [326 IAC 2-2-8]

Pursuant to 326 IAC 2-2-8(a)(1), the Commissioner may revoke this approval if construction is not commenced within eighteen (18) months after receipt of this approval or if construction is suspended for a continuous period of eighteen (18) months or more.

B.5 Significant Source Modification [326 IAC 2-7-10.5(h)]

This document shall also become the approval to operate pursuant to 326 IAC 2-7-10.5(h) when, prior to start of operation, the following requirements are met:

- (a) The attached affidavit of construction shall be submitted to the Office of Air Management (OAM), Permit Administration & Development Section, verifying that the emission units were constructed as proposed in the application. The emissions units covered in the Significant Source Modification approval may begin operating on the date the affidavit of construction is postmarked or hand delivered to IDEM if constructed as proposed.
- (b) If actual construction of the emissions units differs from the construction proposed in the application, the source may not begin operation until the source modification has been revised pursuant to 326 IAC 2-7-11 or 326 IAC 2-7-12 and an Operation Permit Validation Letter is issued.
- (c) If construction is completed in phases; i.e., the entire construction is not done continuously, a separate affidavit must be submitted for each phase of construction. Any permit conditions associated with operation start up dates such as stack testing for New Source Performance Standards (NSPS) shall be applicable to each individual phase.
- (d) The Permittee shall receive an Operation Permit Validation Letter from the Chief of the Permit Administration & Development Section and attach it to this document.

However, in the event that the Title V application is being processed at the same time as this application, the following additional procedures shall be followed for obtaining the right to operate:

- (1) If the Title V draft permit has not gone on public notice, then the change/addition covered by the Significant Source Modification will be included in the Title V draft.
- (2) If the Title V permit has gone thru final EPA proposal and would be issued ahead of the Significant Source Modification, the Significant Source Modification will go thru a

concurrent 45 day EPA review. Then the Significant Source Modification will be incorporated into the final Title V permit at the time of issuance.

- (3) If the Title V permit has not gone thru final EPA review and would be issued after the Significant Source Modification is issued, then the Modification would be added to the proposed Title V permit, and the Title V permit will be issued after EPA review.

SECTION C GENERAL OPERATION CONDITIONS

C.1 Certification [326 IAC 2-7-4(f)][326 IAC 2-7-6(1)][326 IAC 2-7-5(3)(C)]

- (a) Where specifically designated by this approval or required by an applicable requirement, any application form, report, or compliance certification submitted under this approval shall contain certification by a responsible official of truth, accuracy, and completeness. This certification, shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.
- (b) One (1) certification shall be included, on the attached Certification Form, with each submittal.
- (c) A responsible official is defined at 326 IAC 2-7-1(34).

C.2 Preventive Maintenance Plan [326 IAC 2-7-5(1),(3) and (13)] [326 IAC 2-7-6(1) and (6)] [326 IAC 1-6-3]

- (a) If required by specific condition(s) in Section D of this approval, the Permittee shall prepare and maintain Preventive Maintenance Plans (PMP) within ninety (90) days after issuance of this approval, including the following information on each facility:
 - (1) Identification of the individual(s) responsible for inspecting, maintaining, and repairing emission control devices;
 - (2) A description of the items or conditions that will be inspected and the inspection schedule for said items or conditions;
 - (3) Identification and quantification of the replacement parts that will be maintained in inventory for quick replacement.

If due to circumstances beyond its control, the PMP cannot be prepared and maintained within the above time frame, the Permittee may extend the date an additional ninety (90) days provided the Permittee notifies:

Indiana Department of Environmental Management
Compliance Branch, Office of Air Management
100 North Senate Avenue, P. O. Box 6015
Indianapolis, Indiana 46206-6015

- (b) The Permittee shall implement the Preventive Maintenance Plans as necessary to ensure that failure to implement the Preventive Maintenance Plan does not cause or contribute to a violation of any limitation on emissions or potential to emit.
- (c) PMP's shall be submitted to IDEM, OAM, upon request and shall be subject to review and approval by IDEM, OAM,. IDEM, OAM, may require the Permittee to revise its Preventive Maintenance Plan whenever lack of proper maintenance causes or contributes to any violation.

C.3 Permit Amendment or Modification [326 IAC 2-7-11] [326 IAC 2-7-12]

- (a) The Permittee must comply with the requirements of 326 IAC 2-7-11 or 326 IAC 2-7-12 whenever the Permittee seeks to amend or modify this approval

- (b) Any application requesting an amendment or modification of this approval shall be submitted to:

Indiana Department of Environmental Management
Permits Branch, Office of Air Management
100 North Senate Avenue, P.O. Box 6015
Indianapolis, Indiana 46206-6015

Any such application should be certified by the "responsible official" as defined by 326 IAC 2-7-1(34) only if a certification is required by the terms of the applicable rule

- (c) The Permittee may implement administrative amendment changes addressed in the request for an administrative amendment immediately upon submittal of the request. [326 IAC 2-7-11(c)(3)]

C.4 Opacity [326 IAC 5-1]

Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary Exemptions), opacity shall meet the following, unless otherwise stated in this approval:

- (a) Opacity shall not exceed an average of forty percent (40%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.
- (b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings) as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor in a six (6) hour period.

C.5 Operation of Equipment [326 IAC 2-7-6(6)]

Except as otherwise provided in this approval, all air pollution control equipment listed in this approval and used to comply with an applicable requirement shall be operated at all times that the emission units vented to the control equipment are in operation.

Testing Requirements [326 IAC 2-7-6(1)]

C.6 Performance Testing [326 IAC 3-6][326 IAC 2-1.1-11]

- (a) Compliance testing on new emission units shall be conducted within 60 days after achieving maximum production rate, but no later than 180 days after initial start-up, if specified in Section D of this approval. All testing shall be performed according to the provisions of 326 IAC 3-6 (Source Sampling Procedures), except as provided elsewhere in this approval, utilizing any applicable procedures and analysis methods specified in 40 CFR 51, 40 CFR 60, 40 CFR 61, 40 CFR 63, 40 CFR 75, or other procedures approved by IDEM, OAM.

A test protocol, except as provided elsewhere in this approval, shall be submitted to:

Indiana Department of Environmental Management
Compliance Data Section, Office of Air Management
100 North Senate Avenue, P. O. Box 6015
Indianapolis, Indiana 46206-6015

no later than thirty-five (35) days prior to the intended test date. The Permittee shall submit a notice of the actual test date to the above address so that it is received at least two weeks prior to the test date.

- (b) All test reports must be received by IDEM, OAM within forty-five (45) days after the completion of the testing. An extension may be granted by the IDEM, OAM, if the source submits to IDEM, OAM, a reasonable written explanation within five (5) days prior to the end of the initial forty-five (45) day period.

The documentation submitted by the Permittee does not require certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

Compliance Monitoring Requirements [326 IAC 2-7-5(1)] [326 IAC 2-7-6(1)]

C.7 Compliance Monitoring [326 IAC 2-7-5(3)] [326 IAC 2-7-6(1)]

Compliance with applicable requirements shall be documented as required by this approval. All monitoring and record keeping requirements not already legally required shall be implemented within ninety (90) days of approval issuance. The Permittee shall be responsible for installing any necessary equipment and initiating any required monitoring related to that equipment. If due to circumstances beyond its control, that equipment cannot be installed and operated within ninety (90) days, the Permittee may extend the compliance schedule related to the equipment for an additional ninety (90) days provided the Permittee notifies:

Indiana Department of Environmental Management
Compliance Branch, Office of Air Management
100 North Senate Avenue, P. O. Box 6015
Indianapolis, Indiana 46206-6015

in writing, prior to the end of the initial ninety (90) day compliance schedule, with full justification of the reasons for the inability to meet this date.

The notification which shall be submitted by the Permittee does require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

Corrective Actions and Response Steps [326 IAC 2-7-5] [326 IAC 2-7-6]

**C.8 Compliance Monitoring Plan - Failure to Take Response Steps [326 IAC 2-7-5][326 IAC 2-7-6]
[326 IAC 1-6]**

- (a) The Permittee is required to implement a compliance monitoring plan to ensure that reasonable information is available to evaluate its continuous compliance with applicable requirements. This compliance monitoring plan is comprised of:
- (1) This condition;
 - (2) The Compliance Determination Requirements in Section D of this approval,
 - (3) The Compliance Monitoring Requirements in Section D of this approval;
 - (4) The Record Keeping and Reporting Requirements in Section C (Monitoring Data Availability, General Record Keeping Requirements, and General Reporting Requirements) and in Section D of this approval; and

- (5) A Compliance Response Plan (CRP) for each compliance monitoring condition of this approval. CRP's shall be submitted to IDEM, OAM upon request and shall be subject to review and approval by IDEM, OAM. The CRP shall be prepared within ninety (90) days after issuance of this approval by the Permittee and maintained on site, and is comprised of :
 - (A) Response steps that will be implemented in the event that compliance related information indicates that a response step is needed pursuant to the requirements of Section D of this approval; and
 - (B) A time schedule for taking such response steps including a schedule for devising additional response steps for situations that may not have been predicted.
- (b) For each compliance monitoring condition of this approval, appropriate response steps shall be taken when indicated by the provisions of that compliance monitoring condition. Failure to perform the actions detailed in the compliance monitoring conditions or failure to take the response steps within the time prescribed in the Compliance Response Plan, shall constitute a violation of the approval unless taking the response steps set forth in the Compliance Response Plan would be unreasonable.
- (c) After investigating the reason for the excursion, the Permittee is excused from taking further response steps for any of the following reasons:
 - (1) The monitoring equipment malfunctioned, giving a false reading. This shall be an excuse from taking further response steps providing that prompt action was taken to correct the monitoring equipment.
 - (2) The Permittee has determined that the compliance monitoring parameters established in the approval conditions are technically inappropriate, has previously submitted a request for an administrative amendment to the approval, and such request has not been denied or;
 - (3) An automatic measurement was taken when the process was not operating, or
 - (4) The process has already returned to operating within "normal" parameters and no response steps are required.
- (d) Records shall be kept of all instances in which the compliance related information was not met and of all response steps taken. In the event of an emergency, the provisions of 326 IAC 2-7-16 (Emergency Provisions) requiring prompt corrective action to mitigate emissions shall prevail.

C.9 Actions Related to Noncompliance Demonstrated by a Stack Test [326 IAC 2-7-5]
[326 IAC 2-7-6]

- (a) When the results of a stack test performed in conformance with Section C - Performance Testing, of this approval exceed the level specified in any condition of this approval, the Permittee shall take appropriate corrective actions. The Permittee shall submit a description of these corrective actions to IDEM, OAM, within thirty (30) days of receipt of the test results. The Permittee shall take appropriate action to minimize emissions from the affected facility while the corrective actions are being implemented. IDEM, OAM shall notify the Permittee within thirty (30) days if the corrective actions taken are deficient. The Permittee shall submit a description of additional corrective actions taken

to IDEM, OAM within thirty (30) days of receipt of the notice of deficiency. IDEM, OAM reserves the authority to use enforcement activities to resolve noncompliant stack tests.

- (b) A retest to demonstrate compliance shall be performed within one hundred twenty (120) days of receipt of the original test results. Should the Permittee demonstrate to IDEM, OAM that retesting in one-hundred and twenty (120) days is not practicable, IDEM, OAM may extend the retesting deadline. Failure of the second test to demonstrate compliance with the appropriate approval conditions may be grounds for immediate revocation of the approval to operate the affected facility.

The documents submitted pursuant to this condition do not require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

Record Keeping and Reporting Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-19]

C.10 Monitoring Data Availability [326 IAC 2-7-6(1)] [326 IAC 2-7-5(3)]

- (a) With the exception of performance tests conducted in accordance with Section C-Performance Testing, all observations, sampling, maintenance procedures, and record keeping, required as a condition of this approval shall be performed at all times the equipment is operating at normal representative conditions.
- (b) As an alternative to the observations, sampling, maintenance procedures, and record keeping of subsection (a) above, when the equipment listed in Section D of this approval is not operating, the Permittee shall either record the fact that the equipment is shut down or perform the observations, sampling, maintenance procedures, and record keeping that would otherwise be required by this approval.
- (c) If the equipment is operating but abnormal conditions prevail, additional observations and sampling should be taken with a record made of the nature of the abnormality.
- (d) If for reasons beyond its control, the operator fails to make required observations, sampling, maintenance procedures, or record keeping, reasons for this must be recorded.
- (e) At its discretion, IDEM may excuse such failure providing adequate justification is documented and such failures do not exceed five percent (5%) of the operating time in any quarter.
- (f) Temporary, unscheduled unavailability of staff qualified to perform the required observations, sampling, maintenance procedures, or record keeping shall be considered a valid reason for failure to perform the requirements stated in (a) above.

C.11 General Record Keeping Requirements [326 IAC 2-7-5(3)][326 IAC 2-7-6]

- (a) Records of all required monitoring data and support information shall be retained for a period of at least five (5) years from the date of monitoring sample, measurement, report, or application. These records shall be kept at the source location for a minimum of three (3) years and available upon the request of an IDEM, OAM, representative. The records may be stored elsewhere for the remaining two (2) years as long as they are available upon request. If the Commissioner makes a written request for records to the Permittee the Permittee shall furnish the records to the Commissioner within a reasonable time.

- (b) Records of required monitoring information shall include, where applicable:
 - (1) The date, place, and time of sampling or measurements;
 - (2) The dates analyses were performed;
 - (3) The company or entity performing the analyses;
 - (4) The analytic techniques or methods used;
 - (5) The results of such analyses; and
 - (6) The operating conditions existing at the time of sampling or measurement.
- (c) Support information shall include, where applicable:
 - (1) Copies of all reports required by this approval;
 - (2) All original strip chart recordings for continuous monitoring instrumentation;
 - (3) All calibration and maintenance records;
 - (4) Records of preventive maintenance shall be sufficient to demonstrate that failure to implement the Preventive Maintenance Plan did not cause or contribute to a violation of any limitation on emissions or potential to emit. To be relied upon subsequent to any such violation, these records may include, but are not limited to: work orders, parts inventories, and operator's standard operating procedures. Records of response steps taken shall indicate whether the response steps were performed in accordance with the Compliance Response Plan required by Section C - Compliance Monitoring Plan - Failure to take Response Steps, of this approval, and whether a deviation from an approval condition was reported. All records shall briefly describe what maintenance and response steps were taken and indicate who performed the tasks.
- (d) All record keeping requirements not already legally required shall be implemented within ninety (90) days of approval issuance.

C.12 General Reporting Requirements [326 IAC 2-7-5(3)(C)]

- (a) The reports required by conditions in Section D of this approval shall be submitted to:

Indiana Department of Environmental Management
Compliance Data Section, Office of Air Management
100 North Senate Avenue, P. O. Box 6015
Indianapolis, Indiana 46206-6015
- (b) Unless otherwise specified in this approval, any notice, report, or other submission required by this approval shall be considered timely if the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAM, on or before the date it is due.

- (c) Unless otherwise specified in this approval, any quarterly report shall be submitted within thirty (30) days of the end of the reporting period. The report does not require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).
- (d) The first report shall cover the period commencing on the date of issuance of this approval and ending on the last day of the reporting period.

SECTION D.1

FACILITY OPERATION CONDITIONS

Facility Description [326 IAC 2-7-5(15)]

Bomb Finishing Line with a maximum capacity of thirteen (13) units per hour and Projectile Renovation Operations with a maximum capacity of 120 units per hour, consisting of the following units:

Three (3) paint booths, identified as:

- (a) CRN-2728-01-12-N42, using a dry filter to control particulate matter emissions.
- (b) CRN-2728-02-12-N42, using a dry filter to control particulate matter emissions.
- (c) CRN-2728-03-12-N42, using a dry filter to control particulate matter emissions.

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)

Emissions Limitations and Standards [326 IAC 2-7-5(1)]

D.1.1 Particulate Matter Emissions Limitations [326 IAC 6-3-2]

The PM from the projectile renovations operations shall not exceed the pound per hour emission rate established as E in the following formula:

Interpolation and extrapolation of the data for the process weight rate up to sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$$E = 4.10 P^{0.67}$$

where E = rate of emission in pounds per hour and
P = process weight rate in tons per hour

D.1.2 Prevention of Significant Deterioration [326 IAC 2-2] [40 CFR 52.21]

The input VOC to the three (3) paint booths shall be limited to 39.0 tons, including coatings, dilution solvents, and cleaning solvents, per 12 consecutive month period. This usage limit is required to limit the potential to emit of VOC to less than 40 tons per 12 consecutive month period. Compliance with this limit makes 326 IAC 2-2 (Prevention of Significant Deterioration) and 40 CFR 52.21 not applicable.

D.1.3 General Provisions Relating to VOC Rules: Military Specifications [326 IAC 8-1-7]

Pursuant to 326 IAC 8-1-7 (Military Specifications), the volatile organic compound (VOC) content of coating delivered to each of the paint booths shall be limited to 5.45 pounds of VOCs per gallon of coating less water, for air dried coatings for each paint booth.

D.1.4 Miscellaneous Metal Coating Operations [326 IAC 8-2-9]

Pursuant to 326 IAC 8-2-9 (Miscellaneous Metal Coating Operations), solvent sprayed from application equipment during cleanup or color changes shall be directed into containers. Such containers shall be closed as soon as such solvent spraying is complete, and the waste solvent shall be disposed of in such a manner that evaporation is minimized.

D.1.5 Preventative Maintenance Plan [326 IAC 2-7-5(13)]

A Preventive Maintenance Plan, in accordance with Section B - Preventive Maintenance Plan, of this permit, is required for this facility and its control device.

Compliance Determination Requirements

D.1.6 Testing Requirements [326 IAC 2-7-6(1),(6)]

The Permittee is not required to test this facility by this permit. However, IDEM may require compliance testing at any specific time when necessary to determine if the facility is in compliance. If testing is required by IDEM, compliance with the particulate matter and VOC limits specified in Condition D.1.1, D.1.2, and D.1.3, shall be determined by a performance test conducted in accordance with Section C - Performance Testing.

D.1.7 Volatile Organic Compounds (VOC)

Compliance with the VOC content and usage limitations contained in Conditions D.1.2 and D.1.3 shall be determined pursuant to 326 IAC 8-1-4(a)(3) and 326 IAC 8-1-2(a) using formulation data supplied by the coating manufacturer. IDEM, OAM reserves the authority to determine compliance using Method 24 in conjunction with the analytical procedures specified in 326 IAC 8-1-4.

D.1.8 VOC Emissions

Compliance with Conditions D.1.2 and D.1.3 shall be demonstrated at the end of each month based on the total volatile organic compound usage for the most recent twelve (12) month period.

Compliance Monitoring Requirements [326 IAC 2-7-6(1)] [326 IAC 2-7-5(1)]

D.1.9 Particulate Matter (PM)

The fabric filters for PM control shall be in operation at all times the paint booths are in operation.

D.1.10 Monitoring

- (a) Daily inspections shall be performed to verify the placement, integrity and particle loading of the filters. To monitor the performance of the fabric filters, weekly observations shall be made of the overspray from the paint booth stacks while one or more of the booths are in operation. The Compliance Response Plan shall be followed whenever a condition exists which should result in a response step. Failure to take response steps in accordance with Section C - Compliance Monitoring Plan - Failure to Take Response Steps, shall be considered a violation of this permit.
- (b) Monthly inspections shall be performed of the coating emissions from the stack and the presence of overspray on the rooftops and the nearby ground. The Compliance Response Plan for this unit shall contain troubleshooting contingency and response steps for when a noticeable change in overspray emission, or evidence of overspray emission is observed. The Compliance Response Plan shall be followed whenever a condition exists which should result in a response step. Failure to take response steps in accordance with Section C - Compliance Monitoring Plan - Failure to Take Response Steps, shall be considered a violation of this permit.
- (c) Additional inspections and preventive measures shall be performed as prescribed in the Preventive Maintenance Plan.

Record Keeping and Reporting Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-19]

D.1.11 Record Keeping Requirements

- (a) To document compliance with Conditions D.1.2. and D.1.3, the Permittee shall maintain records in accordance with (1) through (5) below. Records maintained for (1) through (5) shall be taken monthly and shall be complete and sufficient to establish compliance with the VOC usage limits and/or the VOC emission limits established in Condition D.1.2 and D.1.3.
 - (1) The amount and VOC content of each coating material and solvent used. Records shall include purchase orders, invoices, and material safety data sheets (MSDS) necessary to verify the type and amount used. Solvent usage records shall differentiate between those added to coatings and those used as cleanup solvents;
 - (2) A log of the dates of use;
 - (3) The cleanup solvent usage for each month;
 - (4) The total VOC usage for each month; and
 - (5) The weight of VOCs emitted for each compliance period.
- (b) To document compliance with Condition D.1.10, the Permittee shall maintain a log of weekly overspray observations, daily and monthly inspections, and those additional inspections prescribed by the Preventive Maintenance Plan.
- (c) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

D.1.12 Reporting Requirements

A quarterly summary of the information to document compliance with Conditions D.1.2 shall be submitted to the address listed in Section C - General Reporting Requirements, of this permit, using the reporting forms located at the end of this permit, or their equivalent, within thirty (30) days after the end of the quarter being reported.

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR MANAGEMENT
COMPLIANCE DATA SECTION**

**PART 70 SOURCE MODIFICATION
CERTIFICATION**

Source Name: Naval Surface Warfare Center, Crane Division
Source Address: 300 Highway 361, Crane Indiana 47522-5001
Mailing Address: Code 095 Building 3260, NASURFWARCENDIV, 300 Highway 361, Crane, IN
47522-5009
Source Modification No.: 101-11153-00005

**This certification shall be included when submitting monitoring, testing reports/results
or other documents as required by this approval.**

Please check what document is being certified:

- ☐ Test Result (specify) _____
- ☐ Report (specify) _____
- ☐ Notification (specify) _____
- ☐ Other (specify) _____

I certify that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

Signature: _____

Printed Name: _____

Title/Position: _____

Date: _____

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR MANAGEMENT
COMPLIANCE DATA SECTION**

Part 70 Source Modification Quarterly Report

Source Name: Naval Surface Warfare Center, Crane Division
Source Address: 300 Highway 361, Crane Indiana 47522-5001
Mailing Address: Code 095 Building 3260, NASURFWARCENDIV, 300 Highway 361, Crane, IN
47522-5009
Source Modification No.: 101-11153-00005
Facility: Projectile Renovations Operations (paint booths-2728-01, 2728-02, 2728-03)
Parameter: PSD limit for VOCs
Limit: 39.0 tons of VOC per year

YEAR: _____

Month	Column 1	Column 2	Column 1 + Column 2
	This Month	Previous 11 Months	12 Month Total
Month 1			
Month 2			
Month 3			

- ☐ No deviation occurred in this quarter.
- ☐ Deviation/s occurred in this quarter.
Deviation has been reported on: _____

Submitted by: _____
Title / Position: _____
Signature: _____
Date: _____
Phone: _____

Indiana Department of Environmental Management Office of Air Management

Addendum to the Technical Support Document for a Part 70 Significant Source Modification

Source Name:	Naval Surface Warfare Center, Crane Division (NSWC)
Source Location:	300 Highway 361, Crane, Indiana 47522-5001
County:	Martin
SIC Code:	3483
Operation Permit No.:	T 101-7341-00005
Operation Permit Issuance Date:	not issued yet
Significant Source Modification No.:	101-11153-00005
Permit Reviewer:	Kimberly Titzer

On August 18, 1999, the Office of Air Management (OAM) had a notice published in the *Shoals News*, Shoals, Indiana, stating that Naval Surface Warfare Center, Crane Division (NSWC) had applied for a Part 70 Operating Permit to operate Projectile Renovation Operations. The notice also stated that OAM proposed to issue a permit for this operation and provided information on how the public could review the proposed permit and other documentation. Finally, the notice informed interested parties that there was a period of thirty (30) days to provide comments on whether or not this permit should be issued as proposed.

On September 9, 1999, NSWC submitted comments on the proposed Part 70 permit. The summary of the comments is as follows:

Comment 1: Section A.1 General Information:

Responsible Official should be changed from "Captain J.M. Carney" to "Captain T. Scott Wetter"

Response 1: To clarify the correct "responsible official," the following change has been made to the permit:

Responsible Official: **Captain T. Scott Wetter** ~~Captain J. M. Carney~~

Comment 2: Global change to Emission Unit Information:

Permit refers to "Projectile Renovation Operations with a maximum capacity of 2.4 pounds of projectile per hour". Each projectile is 98 pounds, so this limit is not achievable. Limit needs to be changed to reflect paint usage per hour. Suggest wording be changed to "Projectile Renovation Operations with a maximum capacity of 2.4 gallons of paint usage per hour", or "Projectile Renovation Operations with a maximum capacity of 120 units per hour". The second option would be consistent with the wording that sets the limit for the Bomb Finishing Line.

Response 2: The following change has been made to the permit to clarify the description of the Projectile Renovation Operations as follows:

A.2 Emission Units and Pollution Control Equipment Summary [326 IAC 2-7-4(c)(3)]
[326 IAC 2-7-5(15)]

This stationary source is approved to construct and operate the following emission units and pollution control devices:

- (1) Bomb Finishing Line with a maximum capacity of thirteen (13) units per hour and Projectile Renovation Operations with a maximum capacity of **120 units** ~~2.4 pounds of~~ projectile per hour, consisting of the following units:

SECTION D.1

FACILITY OPERATION CONDITIONS

Facility Description [326 IAC 2-7-5(15)]
Bomb Finishing Line with a maximum capacity of thirteen (13) units per hour and Projectile Renovation Operations with a maximum capacity of **120 units** ~~2.4 pounds of~~ projectile per hour, consisting of the following units:

Comment 3: Global change:

Change "fabric filter" to "dry filter" or "fiberglass filter" when referring to the particulate matter controls.

Response 3: The following changes have been made to the permit to clarify the correct type of particulate matter control as follows:

A.2 Emission Units and Pollution Control Equipment Summary [326 IAC 2-7-4(c)(3)]
[326 IAC 2-7-5(15)]

This stationary source is approved to construct and operate the following emission units and pollution control devices:

- (1) Bomb Finishing Line with a maximum capacity of thirteen (13) units per hour and Projectile Renovation Operations with a maximum capacity of 2.4 pounds of projectile per hour, consisting of the following units:
 - (a) CRN-2728-01-12-N42, using a **dry** fabric filter to control particulate matter emissions.
 - (b) CRN-2728-02-12-N42, using a **dry** fabric filter to control particulate matter emissions.
 - (c) CRN-2728-03-12-N42, using a **dry** fabric filter to control particulate matter emissions.

SECTION D.1

FACILITY OPERATION CONDITIONS

Facility Description [326 IAC 2-7-5(15)]
Bomb Finishing Line with a maximum capacity of thirteen (13) units per hour and Projectile Renovation Operations with a maximum capacity of 2.4 pounds of projectile per hour, consisting of the following units:

- (a) CRN-2728-01-12-N42, using a **dry** fabric filter to control particulate matter emissions.
- (b) CRN-2728-02-12-N42, using a **dry** fabric filter to control particulate matter emissions.
- (c) CRN-2728-03-12-N42, using a **dry** fabric filter to control particulate matter emissions.

Comment 4: Page 1 of 17, Title Page for Part 70 Significant Source Modification:
Change "highway" to "Highway".

Response 4: The following change has been made to the permit:

**Naval Surface Warfare Center, Crane Division
300 Hhighway 361
Crane, Indiana 47522-5001**

Comment 5: Page 2 of 17, Table of Contents--Section D.1:
Change "Renovations" to "Renovation".

Response 5: The following change has been made to the permit:

D.1 FACILITY OPERATION CONDITIONS - Projectile Renovations Operations

Comment 6: Page 5 of 17, Condition B.5--paragraph (3):
Change "will issued" to "will be issued".

Response 6: The following change has been made to the permit:

B.5 Significant Source Modification [326 IAC 2-7-10.5(h)]

- (3) If the Title V permit has not gone thru final EPA review and would be issued after the Significant Source Modification is issued, then the Modification would be added to the proposed Title V permit, and the Title V permit will be issued after EPA review.

TSD Comment 1: Page 1 of 7, History:
Change "building" to "Building".

TSD Response 1: The OAM prefers that the Technical Support Document reflect the permit that was on public notice. Changes to the permit or technical support material that occur after the public notice are documented in this Addendum to the Technical Support Document. This accomplishes the desired result of ensuring that these types of concerns are documented and part of the record regarding this permit decision. Therefore the TSD should have read:

History

On July 13, 1999, Crane Division, Naval Surface Warfare Center submitted an application to the OAM requesting to add projectile renovation operations to the existing bomb finishing line in Bbuilding 2728. Crane Division, Naval Surface Warfare Center has not been issued a Title V Operating Permit.

Upon further review, the OAM has decided to make the following revisions to the permit (bolded language has been added, the language with a line through it has been deleted). The Table Of Contents has been modified to reflect these changes.



Naval Surface Warfare Center, Crane Division
Franklin, Indiana
Permit Reviewer: Kimberly Titzer

Lori F. Kasper
Commissioner

Page 4 of 4
100 North 153rd Avenue
P.O. Box 6015
Indianapolis, Indiana 46206 6015
(317) 232-8603
(800) 451-6027
www.state.in.us/idem

Section A:
Condition A.1--General Information

The following change has been made to the permit to use the correct spelling to clarify the definition of ordinance vs. ordnance.

A.1 General Information [326 IAC 2-7-4(c)] [326 IAC 2-7-5(15)]

The Permittee owns and operates a military base where ammunition, rockets and other military ~~ordnance~~ **ordnance** are manufactured, stored and disposed.

Condition A.2--Emission Units and Pollution Control Equipment Summary

The IDEM, OAM has added additional language to clarify the Projectile Renovation Operations as paint booths as follows:

A.2 Emission Units and Pollution Control Equipment Summary [326 IAC 2-7-4(c)(3)] [326 IAC 2-7-5(15)]

This stationary source is approved to construct and operate the following emission units and pollution control devices:

- (1) Bomb Finishing Line with a maximum capacity of thirteen (13) units per hour and Projectile Renovation Operations with a maximum capacity of 2.4 pounds of projectile per hour, consisting of the following units:

Three (3) paint booths, identified as:

- (a) CRN-2728-01-12-N42, using a fabric filter to control particulate matter emissions.
- (b) CRN-2728-02-12-N42, using a fabric filter to control particulate matter emissions.
- (c) CRN-2728-03-12-N42, using a fabric filter to control particulate matter emissions.

Indiana Department of Environmental Management Office of Air Management

Technical Support Document (TSD) for a Part 70 Significant Source Modification.

Source Background and Description

Source Name:	Naval Surface Warfare Center, Crane Division (NSWC)
Source Location:	300 Highway 361, Crane, Indiana 47522-5001
County:	Martin
SIC Code:	3483
Operation Permit No.:	T 101-7341-00005
Operation Permit Issuance Date:	not issued yet
Significant Source Modification No.:	101-11153-00005
Permit Reviewer:	Kimberly Titzer

The Office of Air Management (OAM) has reviewed a modification application from the Naval Surface Warfare Center, Crane Division relating to the construction of the following emission units and pollution control devices:

Bomb Finishing Line with a maximum capacity of thirteen (13) units per hour and Projectile Renovation Operations with a maximum capacity of 2.4 pounds of projectile per hour, consisting of the following units:

- (a) CRN-2728-01-12-N42, using a fabric filter to control particulate matter emissions.
- (b) CRN-2728-02-12-N42, using a fabric filter to control particulate matter emissions.
- (c) CRN-2728-03-12-N42, using a fabric filter to control particulate matter emissions.

History

On July 13, 1999, Crane Division, Naval Surface Warfare Center submitted an application to the OAM requesting to add projectile renovation operations to the existing bomb finishing line in building 2728. Crane Division, Naval Surface Warfare Center has not been issued a Title V Operating Permit.

Enforcement Issue

There are no enforcement actions pending.

Stack Summary

Stack ID	Operation	Height (feet)	Diameter (feet)	Flow Rate (acfm)	Temperature (°F)
2728-01	paint booth	28.5	2	8800	ambient
2728-02	paint booth	28.5	2	8800	ambient
2728-03	paint booth	29	2	8800	ambient



Frank R. ~~Re~~commendation
Governor

Lori F. Kaplan
Commissioner

100 North Senate Avenue
P.O. Box 6015
Indianapolis, Indiana 46206-6015
(317) 451-6027
www.state.in.us/idem

The staff recommends to the Commissioner that the Part 70 Significant Source Modification be approved. This recommendation is based on the following facts and conditions:

Unless otherwise stated, information used in this review was derived from the application and additional information submitted by the applicant.

An application for the purposes of this review was received on July 13, 1999.

Emission Calculations

See Appendix A of this document for detailed emissions calculations (pages 6-7).

Potential To Emit of Modification

Pursuant to 326 IAC 2-1.1-1(16), Potential to Emit is defined as "the maximum capacity of a stationary source to emit any air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of a source to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation or type or amount of material combusted, stored, or processed shall be treated as part of its design if the limitation is enforceable by the U. S. EPA."

This table reflects the PTE before controls. Control equipment is not considered federally enforceable until it has been required in a federally enforceable permit.

Pollutant	Potential To Emit (tons/year)
PM	38.5
PM-10	38.5
SO ₂	0
VOC	52.85
CO	0
NO _x	0

HAP's	Potential To Emit (tons/year)
<i>Toluene</i>	<i>0.39</i>
<i>Xylene</i>	<i>2.51</i>
<i>EthylBenzene</i>	<i>0.31</i>
<i>Bis Phthalate</i>	<i>0.93</i>
TOTAL	4.14

Justification for Modification

The Part 70 Operating permit is being modified through a Part 70 Significant Source Modification, based on potential to emit emissions greater than twenty-five (25) tons per year. This modification is being performed pursuant to 326 IAC 2-7-10.5 and 2-7-12(d).

County Attainment Status

The source is located in Martin County.

Pollutant	Status
PM-10	attainment
SO ₂	attainment
NO ₂	attainment

Ozone	attainment
CO	attainment
Lead	attainment

- (a) Volatile organic compounds (VOC) and oxides of nitrogen (NO_x) are precursors for the formation of ozone. Therefore, VOC and NO_x emissions are considered when evaluating the rule applicability relating to the ozone standards. Martin County has been designated as attainment or unclassifiable for ozone. Therefore, VOC and NO_x emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 and 40 CFR 52.21.
- (b) Martin County has been classified as attainment or unclassifiable for particulate matter and volatile organic compounds. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 and 40 CFR 52.21.

Source Status

Existing Source PSD or Emission Offset Definition (emissions after controls, based upon 8760 hours of operation per year at rated capacity and/or as otherwise limited):

NSWC Crane is a major source under PSD regulations and has been since those regulations were promulgated because the potential to emit has always exceeded the thresholds for defining the source as major.

This existing source is a major stationary source because an attainment regulated pollutant is emitted at a rate of 250 tons per year or more, and it is not one of the 28 listed source categories.

Potential to Emit of Modification After Issuance

The table below summarizes the potential to emit, reflecting all limits, of the significant emission units after controls. The control equipment is considered federally enforceable only after issuance of this Part 70 source modification.

	Limited Potential to Emit (tons/year)						
Process/facility	PM	PM-10	SO ₂	VOC	CO	NO _x	HAPs
2728-01	1.01			<39.0			0.3
2728-02	0.94						3.31
2728-03	1.13						0.53
TOTAL	3.08			40.0			4.14

Federal Rule Applicability

- (a) There are no New Source Performance Standards (NSPS)(326 IAC 12 and 40 CFR Part 60) applicable to this proposed modification.
- (b) There are no National Emission Standards for Hazardous Air Pollutants (NESHAPs)(326 IAC 14 and 40 CFR Part 63) applicable to this proposed modification.

State Rule Applicability - Projectile Renovation Operations

326 IAC 2-2 (Prevention of Significant Deterioration)

Pursuant to 326 IAC 2-2 (Prevention of Significant Deterioration), NSWC is a major source (emissions greater than 250 tons per year of any criteria pollutant). Therefore, the projectile renovations operations shall be limited to 39.0 tons of VOC, including coatings, dilution solvents, and cleaning solvents, per 12 consecutive month period. This limit is required to limit the potential to emit of VOC to less than 40.0 tons per 12 consecutive month period. Compliance with this limit makes 326 IAC 2-2 (Prevention of Significant Deterioration) and 40 CFR 52.21 not applicable.

326 IAC 8-1-7 (General Provisions Relating to VOC Rules: Military Specifications)

NSWC, Crane submitted a petition to the commissioner on July 13, 1999 which petitioned for the allowance of military specification coatings, containing VOC content greater than 3.5 pounds per gallon. Pursuant to 326 IAC 8-2-9, a 3.5 lb/gallon of coating is required for any miscellaneous metal coating operation. No low VOC substitute could be located that would meet the military specification TT-E-516, MIL-P-11414, or TT-T-306 requirements. These coatings are required to meet the performance specifications for coating of the military projectiles.

Pursuant to 326 IAC 8-1-7 (General Provisions Relating to VOC Rules: Military Specifications), if emission limitations set forth in 326 IAC 8 conflict with military specifications, the owner or operator of the source may petition the commissioner to have military specifications be the controlling limitation. If the commissioner approves the petition, the modified limitation shall be submitted to the U.S.EPA as a SIP revision.

The IDEM, OAM has evaluated the petition for military specifications and will allow a limit of 5.45 pounds of VOC per coating less water. Based on the Material Safety Data Sheets, 5.45 pounds of VOC per coating less water is the highest allowable limit. Therefore, all coatings to be used in the projectile renovations operations shall be in compliance.

326 IAC 8-2-9 (Miscellaneous Metal Coating)

Pursuant to 326 IAC 8-2-9 (Miscellaneous Metal Coating), solvent sprayed from application equipment during cleanup or color changes shall be directed into containers. Such containers shall be closed as soon as such solvent spraying is complete, and the waste solvent shall be disposed of in such a manner that evaporation is minimized.

326 IAC 6-3-2 (Process Operations)

The PM from the projectile renovations operations shall not exceed the pound per hour emission rate established as E in the following formula:

Interpolation of the data for the process weight rate up to sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$$E = 4.10 P^{0.67} \quad \text{where } E = \text{rate of emission in pounds per hour and} \\ P = \text{process weight rate in tons per hour}$$

The fabric filters shall be in operation at all times the paint booths are in operation, in order to comply with this limit.

Compliance Requirements

Permits issued under 326 IAC 2-7 are required to ensure that sources can demonstrate compliance with applicable state and federal rules on a more or less continuous basis. All state and federal rules contain compliance provisions, however, these provisions do not always

the requirement for a more or less continuous demonstration. When this occurs IDEM, OAM, in conjunction with the source, must develop specific conditions to satisfy 326 IAC 2-7-5. As a result, compliance requirements are divided into two sections: Compliance Determination Requirements and Compliance Monitoring Requirements.

Compliance Determination Requirements in Section D of the permit are those conditions that are found more or less directly within state and federal rules and the violation of which serves as grounds for enforcement action. If these conditions are not sufficient to demonstrate continuous compliance, they will be supplemented with Compliance Monitoring Requirements, also Section D of the permit. Unlike Compliance Determination Requirements, failure to meet Compliance Monitoring conditions would serve as a trigger for corrective actions and not grounds for enforcement action. However, a violation in relation to a compliance monitoring condition will arise through a source's failure to take the appropriate corrective actions within a specific time period.

The compliance monitoring requirements applicable to this modification are as follows:

- (1) **Particulate Matter (PM)**
The fabric filters for PM control shall be in operation at all times when the paint booths (2728-01, 2728-02, 2728-03) are in operation.
- (2) **Monitoring**
 - (a) Daily inspections shall be performed to verify the placement, integrity and particle loading of the filters. To monitor the performance of the dry filters, weekly observations shall be made of the overspray from the surface coating booth stacks (2728-01, 2728-02, 2728-03) while one or more of the booths are in operation. The Compliance Response Plan shall be followed whenever a condition exists which should result in a response step. Failure to take response steps in accordance with Section C - Compliance Monitoring Plan - Failure to Take Response Steps, shall be considered a violation of this permit.
 - (b) Monthly inspections shall be performed of the coating emissions from the stack and the presence of overspray on the rooftops and the nearby ground. The Compliance Response Plan for this unit shall contain troubleshooting contingency and response steps for when a noticeable change in overspray emission, or evidence of overspray emission is observed. The Compliance Response Plan shall be followed whenever a condition exists which should result in a response step. Failure to take response steps in accordance with Section C - Compliance Monitoring Plan - Failure to Take Response Steps, shall be considered a violation of this permit.
 - (c) Additional inspections and preventive measures shall be performed as prescribed in the Preventive Maintenance Plan.

Conclusion

The construction of this proposed modification shall be subject to the conditions of the attached proposed Part 70 Significant Source Modification No. 101-11153-00005.

Appendix A: Emissions Calculations

calculations to show "as applied" (paint + thinner ratio)

2728-01 (Enamel OD)

$$\begin{aligned}\text{Density} &= (\text{density of enamel})(\text{ratio of enamel}) + (\text{density of thinner})(\text{ratio of thinner}) \\ &= (9.73)(1.0) + (6.52)(0.25) \\ &= (9.73) + (1.63) \\ &= (11.36) / (1.0 + 0.25) \\ &= 9.088\end{aligned}$$

$$\begin{aligned}\text{Weight \% Volatile} &= (\text{wt \% vol of enamel})(\text{ratio of enamel}) + (\text{wt \% vol of thinner})(\text{ratio of thinner}) \\ &= (42.1)(1.0) + (100)(0.25) \\ &= (42.1) + (25) \\ &= (67.1) / (1.0 + 0.25) \\ &= 53.68\end{aligned}$$

$$\begin{aligned}\text{Weight \% Volatile "as applied"} &= (\text{Density})(\text{weight \% volatile}) / 100 \\ &= (9.088)(53.68) / 100 \\ &= 4.88\%\end{aligned}$$

2728-02 (Primer)

$$\begin{aligned}\text{Density} &= (\text{density of enamel})(\text{ratio of enamel}) + (\text{density of thinner})(\text{ratio of thinner}) \\ &= (10.13)(1.0) + (6.52)(0.25) \\ &= (10.13) + (1.63) \\ &= (11.76) / (1.0 + 0.25) \\ &= 9.408\end{aligned}$$

$$\begin{aligned}\text{Weight \% Volatile} &= (\text{wt \% vol of enamel})(\text{ratio of enamel}) + (\text{wt \% vol of thinner})(\text{ratio of thinner}) \\ &= (47.4)(1.0) + (100)(0.25) \\ &= (47.4) + (25) \\ &= (72.4) / (1.0 + 0.25) \\ &= 57.92\end{aligned}$$

$$\begin{aligned}\text{Weight \% Volatile "as applied"} &= (\text{Density})(\text{weight \% volatile}) / 100 \\ &= (9.408)(57.92) / 100 \\ &= 5.45\%\end{aligned}$$

2728-03 (Enamel Yellow)

$$\begin{aligned}\text{Density} &= (\text{density of enamel})(\text{ratio of enamel}) + (\text{density of thinner})(\text{ratio of thinner}) \\ &= (9.90)(1.0) + (6.52)(0.25) \\ &= (9.90) + (1.63) \\ &= (11.53) / (1.0 + 0.25) \\ &= 9.224\end{aligned}$$

$$\begin{aligned}\text{Weight \% Volatile} &= (\text{wt \% vol of enamel})(\text{ratio of enamel}) + (\text{wt \% vol of thinner})(\text{ratio of thinner}) \\ &= (42.8)(1.0) + (100)(0.25) \\ &= (42.8) + (25) \\ &= (67.8) / (1.0 + 0.25) \\ &= 54.24\end{aligned}$$

$$\begin{aligned}\text{Weight \% Volatile "as applied"} &= (\text{Density})(\text{weight \% volatile}) / 100 \\ &= (9.224)(54.24) / 100 \\ &= 5.00\%\end{aligned}$$

Appendix A: Emissions Calculations
 VOC and Particulate
 From Surface Coating Operations

Company Name: Naval Surface Warfare Center,
 Crane Division
 Address: 300 Highway 361, Crane,
 City IN Zip: Indiana 47522-5000
 SSM #: 101-11153-00005
 Pk ID: 101-00005
 Reviewer: Kimberly Titzer
 Date: July 1999

Density (Lb/Gal)	Weight % Volatile (H2O& Organics)	Weight % Water	Weight % Organics	Volume % Water	Volume % Non-Vol (solids)	Gal of Mat (gal/unit)	Maximum (unit/hour)	Pounds VOC per gallon of coating less water	Pounds VOC per gallon of coating	Potential VOC pounds per hour	Potential VOC pounds per day	Potential VOC tons per year	Particulate Potential ton/yr	lb VOC /gal solids	Transfer Efficiency
9.1	53.68%	0.0%	53.7%	0.0%	36.80%	0.00630	120.000	4.88	4.88	3.69	88.54	16.16	12.55	13.26	10%
9.4	57.82%	0.0%	57.9%	0.0%	33.30%	0.00630	120.000	5.45	5.45	4.12	98.87	18.04	11.80	16.36	10%
9.2	54.24%	0.0%	54.2%	0.0%	34.30%	0.00709	120.000	5.00	5.00	4.26	102.16	18.64	14.16	14.59	10%

Add worst case coating to all solvents

12.07 289.57 52.85 38.50

= (Density (lb/gal) * Weight % Organics) / (1-Volume % water)
 lb/gal * Weight % Organic

C per Gallon coating (lb/gal) * Gal of Material (gal/unit) * Maximum (units/hr)

C per Gallon coating (lb/gal) * Gal of Material (gal/unit) * Maximum (units/hr) * (24 hr/day)

per Gallon coating (lb/gal) * Gal of Material (gal/unit) * Maximum (units/hr) * (8760 hr/yr) * (1 ton/2000 lbs)

r) * (gal/unit) * (lbs/gal) * (1-Weight % Volatiles) * (1-Transfer efficiency) * (8760 hrs/yr) * (1 ton/2000 lbs)

s/gal) * Weight % organics) / (Volume % solids)

ed

Appendix A: Emissions Calculations

HAPs

From Surface Coating Operations

Company Name: Naval Surface Warfare Center, Crane Division
 Address City IN Zip: 300 Highway 361, Crane, Indiana 47522-5000
 SSM #: 101-11153-00005
 Pk ID: 101-00005
 Permit Reviewer: Kimberly Titzer
 Date: July 1999

HAPS Emissions Calculations

Material	Density (Lb/Gal)	Gallons of Material (gal/unit)	Maximum (unit/hour)	Weight % Toluene	Weight % Xylene	Weight % EthylBenzene	Weight % Bis Phthalate	Toluene Emissions (ton/yr)	Xylene Emissions (tons/yr)	EthylBenzene Emissions (tons/yr)	Bis Phthalate Emissions (tons/yr)
Enamel OD	9.1	0.006300	120.00	0.00%	1.00%			0.00	0.30	0.00	0.00
Primer	9.4	0.006300	120.00	0.64%	6.00%	1.00%	3.00%	0.20	1.87	0.31	0.93
Enamel Yellow	9.2	0.007090	120.00	0.55%	1.00%			0.19	0.34	0.00	0.00

Total State Potential Emissions

0.39 2.51 0.31 0.93

METHODOLOG

HAPS emission rate (tons/yr) = Density (lb/gal) * Gal of Material (gal/unit) * Maximum (unit/hr) * Weight % HAP * 8760 hrs/yr * 1 ton/2000 lbs